6712-01

# FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2, 15, and 90

[ET Docket No. 12-338; FCC 12-140]

**WRC-07 Implementation Order** 

**AGENCY:** Federal Communications Commission.

**ACTION**: Final rule.

**SUMMARY:** This document amends the Commission's rules to correct grammatical, typographical, and display errors in the United States Table of Frequency Allocations (U.S. Table) and also remove inconsistencies between the non-Federal Table of Frequency Allocations (non-Federal Table) and parts 15 and 90 of the Commission's rules.

DATES: Effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**FOR FURTHER INFORMATION CONTACT:** Tom Mooring, Office of Engineering and Technology, 202-418-2450, tom.mooring@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Order, ET Docket No. 12-338, FCC 12-140, adopted November 15, 2012 and released November 19, 2012. The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Center (Room CY-A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this document also may be purchased from the Commission's copy contractor, Best Copy and Printing, Inc., 445 12<sup>th</sup> Street, SW., Room, CY-B402, Washington, DC 20554. The full text may also be downloaded at: www.fcc.gov. People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

## **Summary of the Order**

1. In the Order, the Commission makes several non-substantial editorial revisions to the parts 2, 15, and 90 of the Commission's rules. The most significant of these updates are: 1) correct the

cross references to Allocation Table footnotes in parts 15 and 90 of the Commission's rules; 2) update the list of grandfathered sites in the 1432-1435 MHz band; and 3) remove an unused Federal site from the list of grandfathered sites in the 3650-3700 MHz band.

- 2. <u>US117</u>. NTIA requested that the Commission correct the coordinates for Table Mountain Observatory in US117 by revising the latitude from 40° 07' 50" N to 40° 08' 02" N. The Commission noted that the requested change would have little or no impact on non-Federal operations because paragraph (b) of US117 states that non-Federal use of the 406.1-410 MHz band is limited to the radio astronomy service and as provided by US13 (i.e., two channels that are available for the specific purpose of transmitting hydrological and meteorological data). Accordingly, the Commission revised the coordinates of the Table Mountain Observatory in US117 as requested by NTIA.
- 3. General Aviation Air-Ground Stations. Section 22.805 lists 13 channel pairs that are allocated for the provision of radiotelephone service to airborne mobile subscribers in general aviation aircraft. The Commission amended NG12 to accurately reflect the frequency bands that may be assigned to domestic public land and mobile stations to provide a two-way air-ground public radiotelephone service per Section 22.805. Accordingly, the Commission replaced the 454.4-455 MHz and 459.4-460 MHz bands in NG12 with the more specific 454.6625-454.9875 MHz and 459.6625-459.9875 MHz bands, respectively. The Commission also takes this opportunity to renumber NG12 in frequency order as NG32.
- 4. <u>Radiolocation Use of 420-450 MHz</u>. The <u>WRC-07 Table Clean-up Order</u> renumbered US217 as US269, but did not update a cross reference to this footnote in § 90.103(c)(21). Accordingly, the Commission amended §90.103 ("Radiolocation service") by revising the cross reference in the last sentence of paragraph (c)(21) from "US217" to "US269."
- 5. On-board Communications. In 2006, the Commission added §80.373(g)(2) to its rules to make four frequencies (457.5375 MHz, 457.5625 MHz, 467.5375 MHz, and 467.5625 MHz) available for narrowband use by on-board ship communication stations within U.S. territorial waters. An international footnote, RR 5.287, provides for on-board communication stations on these frequencies outside the territorial waters of the United States. A separate footnote, RR 5.288, makes different frequencies

available for on-board communication stations within the territorial waters of the United States. RR 5.288 is incomplete because it does not include the four narrowband frequencies listed in RR 5.287 that the Commission allocated in 2006 for use by on-board communication stations in the U.S. territorial waters. To correctly show the 2006 Commission action in the Allocation Table, the Commission replaced RR 5.288 with a new U.S. footnote, which we number as US288. US288 incorporates the text from RR 5.288 and adds the four frequencies contained in RR 5.287. The Commission also added a cross reference to part 80 (Stations in the Maritime Mobile Services) to the 462.7375-467.5375 MHz and 467.5375-467.7375 MHz bands in the Allocation Table.

- 6. <u>US361</u>. The 1432-1435 MHz band was a Government transfer band and US361 lists 23 operating areas where Federal stations in the fixed and mobile services may operate indefinitely on a primary basis. At NTIA's request, the Commission amended US361 by correcting the name of a grandfathered site and by removing a grandfathered site. Specifically, the Commission corrected the Location name for 37° 29' North latitude, 114° 14' West longitude from "Nellis AFB, NV" to "Nevada Test and Training Range (NTTR)." Next, because the "AUTEC" location is not within the United States and its insular areas (the listed coordinates are on Andros Island in The Bahamas), it removed this location from US361. Finally, the Commission reorganized and simplified the text of US361 and renumbered this U.S. footnote in frequency order as US83.
- 7. NG168. In the Mobile Use of MSS Bands R&O, the Commission revised the text of NG168. It further amended the text of NG168 to make the following grammatical corrections. First, the Commission introduced the MSS abbreviation, i.e., "mobile-satellite service (MSS)" in the first sentence and removed the introduction of the MSS abbreviation from the last sentence. Second, it made the word "component" plural in the first sentence. The Commission also took this opportunity to renumber NG168 in frequency order as NG43.
- 8. <u>US385</u>. The <u>WRC-07 Table Clean-up Order</u> added "the current text of US269, which urges fixed and mobile except aeronautical mobile licensees in the 2655-2690 MHz band to coordinate their systems, along with the secondary allocation status of the radio astronomy service in the 2655-2690 MHz band that is shown in the U.S. Table, to US311, and renumber[ed] US311 as US385."

However, the cross reference to US311 in § 15.242(e) was not updated at that time. Accordingly, the Commission amended the first sentence in paragraph (e) of §15.242 by revising "US 311" to read "US385."

- 9. <u>US338</u>. The text of US338 applies to the 2305-2310 MHz and 2310-2320 MHz bands, but the reference to US338 is shown only in the 2305-2310 MHz band. The Commission added the missing U.S. footnote, which it renumbered in frequency order as US97, to the 2310-2320 MHz band.
- 10. <u>US348</u>. Primary Federal operations in the 3650-3700 MHz band are limited to three grandfathered radar sites, which are codified in US348 and in §90.1331(b)(1). NTIA has informed us that one of these sites Naval Station Pascagoula has been closed. Accordingly, the Commission amended US348 and § 90.1331(b)(1) to remove the unused Federal site. It also takes this opportunity to renumber US348 in frequency order as US109.
- 11. 10-10.5 GHz. With the concurrence of NTIA, the Commission amended the Federal Table by revising the "10-10.45" GHz band and the reference to "G2" to read "10-10.5" and "G32," respectively. We also revise the text of three footnotes (US58, NG42, NG134) that pertain to the 10-10.5 GHz band. First, the Commission revised US58 by adding the existing amateur-satellite service allocation to the list of permitted non-Federal services in the 10-10.5 GHz band so that this footnote correctly lists all permitted non-Federal services, and it renumbered this footnote in frequency order as US128. Second, the Commission combined the text of NG42 and NG134 (which require that non-Federal stations in the radiolocation service not cause harmful interference to the amateur service in the 10-10.5 GHz band, and that these stations not cause harmful interference to the amateur-satellite service in the 10.45-10.5 GHz sub-band, respectively) and renumbered the new footnote in frequency order as NG50.
- 12. <u>US277 and US355</u>. Initially, NTIA requested that the Commission correct the coordinates for the Arecibo Observatory in US355 by approximately 68 meters (from 18° 20' 39" N, 66° 45' 10" W to 18° 20' 37" N, 66° 45' 11" W). Subsequently, NTIA requested that the Commission correct the elevations of nearly all of the radio astronomy observatories specified in US355. It noted that the requested changes are <u>de minimis</u> in nature and would affect only future non-geostationary satellite orbit systems in the fixed-satellite service (space-to-Earth). Accordingly, the Commission amended US355 by

correcting the coordinates of the Arecibo Observatory and the elevations of 12 of the observatories. It also renumbered US355 in frequency order as US131 and added missing references to this footnote in the 10.6-10.68 GHz (Federal and non-Federal Tables) and 10.7-11.7 GHz bands (Federal Table). The Commission revised US277 by updating the cross reference from US355 to US131. Finally, the Commission renumbered US277 as US130, which places the allocation in US130 adjacent to the list of radio astronomy observatories in US131.

- Government footnotes in § 2.106 of our rules. First, it amended G27 by revising "255" to read "225." Second, the Commission amended G117 by replacing the "17.3-17.7 GHz" and "17.8-21.2 GHz" band entries with "17.375-17.475 GHz" and "17.6-21.2 GHz." This action updates G117 by listing the subbands that are specified in US402 (17.375-17.475 GHz and 17.6-17.7 GHz) and by restricting Federal fixed-satellite service use of the 17.7-17.8 GHz band (which is authorized in US401) to military systems.
- Allocation Display Changes. In the U.S. Table, the Commission generally does not subdivide a frequency band unless it is necessary to do so, e.g., when we are adding a radio service in only a segment of an existing frequency band. In the non-Federal Table, the only difference between the 19.7-20.1 GHz and 20.1-20.2 GHz bands is RR 5.529, and the only differences between the 29.5-29.9 GHz and 29.9-30 GHz bands are RR 5.529 and RR 5.543. Accordingly, the Commission merged these bands to form the 19.7-20.2 GHz and 29.5-30 GHz bands.

# **Paperwork Reduction Act**

15. This <u>Order</u> contains no new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified "information collection burden for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, <u>see</u> 44 U.S.C. 3506(c)(4).

## **Congressional Review Act**

16. The Commission will send a copy of this <u>Order</u> to Congress and the Government Accountability Office pursuant to the Congressional Review Act, <u>see</u> 5 U.S.C. 801(a)(1)(A).

**Ordering Clauses** 

17. Pursuant to sections 1, 4, 301, 302(a), and 303 of the Communications Act of 1934, as

amended, 47 U.S.C. sections 151, 154, 301, 302(a), and 303, and section 553(b)(B) of the Administrative

Procedure Act, 5 U.S.C. 553(b)(B), this ORDER is hereby ADOPTED and the Commission's rules ARE

AMENDED as set forth in the Final rules.

18. The rule amendments adopted herein SHALL BECOME EFFECTIVE [30 DAYS

AFTER DATE OF FEDERAL REGISTER PUBLICATION].

19. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this Order in

a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review

Act, see 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Parts 2, 15, and 90

Spectrum, International telecommunications.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch,

Secretary.

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#### Final rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 2, 15, and 90 as follows:

# PART 2 -- FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

- 2. Section 2.106, the Table of Frequency Allocations, is amended to read as follows.
  - a. Pages 27-28, 32, 36-37, 40, 47, 51-52, and 54 are revised.
- b. In the list of United States (US) Footnotes, footnotes US83, US97, US109, US128, US130, US131, and US288 are added; footnotes US58, US277, US338, US348, US355, and US361 are removed; and footnote US117 is revised.
- c. In the list of non-Federal Government (NG) Footnotes, footnotes NG32, NG43, and NG50 are added; and footnotes NG12, NG42, NG134, and NG168 are removed.
  - d. In the list of Federal Government (G) Footnotes, footnotes G27 and G117 are revised.

### § 2.106 Table of Frequency Allocations.

The revisions and additions read as follows:

\* \* \* \* \*

Fable of Frequency Allocations 410-6 International Table		410-698 MHz (UHF)	United States Table		
Region 1 Table	Region 2 Table	Decien 2 Table	Federal Table		FCC Rule Part(s)
410-420	Region 2 Table	Region 3 Table		Non-Federal Table	
410-420 FIXED			410-420	410-420	Drivate Land Mahila (00)
-IXED MOBILE except aeronautica	d mahila		FIXED MOBILE		Private Land Mobile (90)
SPACE RESEARCH (space			SPACE RESEARCH		MedRadio (95I)
SPACE RESEARCH (Space	e-10-space) 5.266		(space-to-space) 5.268		
				11040 11004	
420-430			US13 US64 G5 420-450	US13 US64 420-450	
420-430 FIXED			RADIOLOCATION G2 G129	Amateur US270	Private Land Mobile (90)
MOBILE except aeronautica	al mobile		RADIOLOCATION GZ G129	Amateur 03270	MedRadio (95I)
พอธานย์ except aeronauแca Radiolocation	ii mobile				Amateur Radio (97)
					Amateur Radio (91)
5.269 5.270 5.271	1400 400				
430-432	430-432				
AMATEUR	RADIOLOCATION				
RADIOLOCATION	Amateur				
5.271 5.272 5.273 5.274					
5.276 5.277	5.271 5.276 5.277 5.278 5.2	279			
432-438	432-438				
AMATEUR	RADIOLOCATION				
RADIOLOCATION	Amateur	ivo) 5 270A			
Earth exploration-satellite (a 5.279A	ctive) Earth exploration-satellite (act	ive) 5.279A			
5.138 5.271 5.272 5.276	5.277     5.271 5.276 5.277 5.278 5.2	770 5 201 5 202			
5.280 5.281 5.282 438-440	438-440	279 5.201 5.202			
AMATEUR	RADIOLOCATION				
RADIOLOCATION	Amateur				
5.271 5.273 5.274 5.275 5.277 5.283	5.271 5.276 5.277 5.278 5.2	770			
140-450	3.211 3.210 3.211 3.210 3.2	219			
FIXED					
MOBILE except aeronautica	al mobile				
Radiolocation			5 000 H004 H007 H0000	5,000, 5,000, 11004, 11007, 110000	
5.269 5.270 5.271 5.284	5 285		5.286 US64 US87 US230 US269 US270 US397 G8	5.282 5.286 US64 US87 US230 US269 US397	
450-455	0.200 0.200		450-454	450-454	Remote Pickup (74D)
FIXED			100 101	LAND MOBILE	Low Power Auxiliary (74H)
MOBILE 5.286AA					Private Land Mobile (90)
			5.286 US64 US87	5.286 US64 US87 NG112 NG124	MedRadio (95I)
			454-456	454-455	` '
				FIXED	Public Mobile (22)
				LAND MOBILE	Maritime (80)
5.209 5.271 5.286 5.286A	5.286B 5.286C 5.286D 5.286E			US64 NG32 NG112 NG148	MedRadio (95I)
455-456	455-456	455-456		455-456	
FIXED	FIXED	FIXED		LAND MOBILE	Remote Pickup (74D)
MOBILE 5.286AA	MOBILE 5.286AA	MOBILE 5.286AA			Low Power Auxiliary (74H)
	MOBILE-SATELLITE (Earth-to				MedRadio (95I)
5.209 5.271 5.286A 5.286	B space) 5.286A 5.286B 5.2	86C   5.209 5.271 5.286A 5.28	6B		
5.286C 5.286E	5.209	5.286C 5.286E	US64	US64	
		•	*		

456-459			456-459	456-460	
FIXED			1400 403	FIXED	Public Mobile (22)
MOBILE 5.286AA				LAND MOBILE	Maritime (80)
5.271 5.287 5.288			5.287 US64 US288		Private Land Mobile (90)
459-460	459-460	459-460	459-460		MedRadio (95I)
FIXED	FIXED	FIXED			
MOBILE 5.286AA	MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-	MOBILE 5.286AA			
E 000 E 074 E 000A E 000D	space) 5.286A 5.286B 5.286C	E 200 E 274 E 200 A E 200 D		5 007 HOOA HOOOO NOOO NOAAO	
5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.209	5.209 5.271 5.286A 5.286B 5.286C 5.286E		5.287 US64 US288 NG32 NG112 NG124 NG148	
460-470	·		460-470	460-462.5375	
FIXED			Meteorological-satellite (space-to-Earth)	FIXED LAND MOBILE	Private Land Mobile (90)
MOBILE 5.286AA  Meteorological-satellite (space-t	o-Earth)		(Space-to-Eartif)		
Motoorological satellite (space t	o Laitii)			5.289 US201 US209 NG124 462.5375-462.7375	
				LAND MOBILE	Personal Radio (95)
				5.289 US201	
				462.7375-467.5375	<u> </u>
				FIXED	Maritime (80)
				LAND MOBILE	Private Land Mobile (90)
				5.287 5.289 US73 US201 US209 US288 NG124	
				467.5375-467.7375	
				LAND MOBILE	Maritime (80)
				5.287 5.289 US201 US288	Personal Radio (95)
				467.7375-470	
				FIXED LAND MOBILE	Maritime (80)
E 007 E 000 E 000 E 000			5.287 5.289 US73 US201		Private Land Mobile (90)
5.287 5.288 5.289 5.290 470-790	470-512	470-585	US209 US288 470-608	5.289 US73 US201 US288 NG124 470-512	Dublic Markita (00)
BROADCASTING	BROADCASTING	FIXED	470-000	FIXED	Public Mobile (22) Broadcast Radio (TV)(73)
Bronsononino	Fixed	MOBILE		LAND MOBILE	LPTV, TV Translator/Booster (74G)
	Mobile	BROADCASTING		BROADCASTING	Low Power Auxiliary (74H)
	5.292 5.293			NG5 NG14 NG66 NG115 NG149	Private Land Mobile (90)
	512-608	5.291 5.298 585-610	_	512-608	Broadcast Radio (TV)(73)
	BROADCASTING	FIXED		BROADCASTING	LPTV, TV Translator/Booster (74G)
	5.297	MOBILE	600 614	NG5 NG14 NG115 NG149	Low Power Auxiliary (74H)
	608-614 RADIO ASTRONOMY	BROADCASTING	608-614	etry and medical telecommand)	Personal Radio (95)
	Mobile-satellite except aeronautical	RADIONAVIGATION	RADIO ASTRONOMY US74	on y and medical telecommand)	1 Gradiai Nadio (33)
	Mobile-satellite (Earth-to-space)	5.149 5.305 5.306 5.307			
		610-890	US246		
	614-698	FIXED MOBILE 5.313A 5.317A	614-698	614-698	D
	BROADCASTING	BROADCASTING		BROADCASTING	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G)
	Fixed				Low Power Auxiliary (74H)
5.149 5.291A 5.294 5.296	Mobile			NOT NOAA NOAAT NOAAO	25th Formit Maxillary (1411)
5.300 5.302 5.304 5.306 5.311A 5.312	5.293 5.309 5.311A	5.440 5.005 5.000 5.003		NG5 NG14 NG115 NG149	
0.011A 0.01Z		5.149 5.305 5.306 5.307 5.311A 5.320			Page 28
		5.311A 5.320			Page 28

	1		-	ir .
		1390-1395	1390-1392	
			FIXED	Wireless Communications (27)
			MOBILE except aeronautical mobile	
			Fixed-satellite (Earth-to-space) US368	
			5.339 US37 US342 US385 US398	
			1392-1395	1
			FIXED	
			MOBILE except aeronautical mobile	
		5.339 US37 US342 US385 US398	5.339 US37 US342 US385 US398	
		1395-1400	•	
		LAND MOBILE (medical telemetry and m	nedical telecommand)	Personal Radio (95)
5.149 5.338 5.338A 5.339	5.149 5.334 5.339	5.339 US37 US342 US385 US398		
1400-1427		1400-1427		
EARTH EXPLORATION-SATELLITE	(passive)	EARTH EXPLORATION-SATELLITE (pa	assive)	
RADIO ASTRONOMY		RADIO ASTRONOMY US74	·	
SPACE RESEARCH (passive)		SPACE RESEARCH (passive)		
5.340 5.341		5.341 US246		
1427-1429		1427-1429.5	1427-1429.5	
SPACE OPERATION (Earth-to-space	e)	LAND MOBILE (medical telemetry	LAND MOBILE (telemetry and telecommand)	Private Land Mobile (90)
FIXED	•	and medical telecommand) US350	Fixed (telemetry)	Personal Radio (95)
MOBILE except aeronautical mobile				
5.338A 5.341				
1429-1452	1429-1452	5.341 US37 US398	5.341 US37 US350 US398	
FIXED	FIXED	1429.5-1432	1429.5-1430	1
MOBILE except aeronautical mobile	MOBILE 5.343		FIXED (telemetry and telecommand)	
			LAND MOBILE (telemetry and telecommand)	
			5.341 US37 US350 US398	
			1430-1432	1
			FIXED (telemetry and telecommand)	
			LAND MOBILE (telemetry and telecommand)	
			Fixed-satellite (space-to-Earth) US368	
		5.341 US37 US350 US398	5.341 US37 US350 US398	
		1432-1435	1432-1435	
			FIXED	Wireless Communications (27)
			MOBILE except aeronautical mobile	
		5.341 US83	5.341 US83	
5.338A 5.341 5.342	5.338A 5.341	1435-1525	10.041 0000	1
1452-1492	1452-1492	MOBILE (aeronautical telemetry)		Aviation (87)
FIXED	FIXED	mobile (doronadioar tolomotry)		7 (1000)
MOBILE except aeronautical mobile				
BROADCASTING 5.345	BROADCASTING 5.345			
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE 5.208B 5.345			
5.208B 5.345				
5.341 5.342	5.341 5.344			
		5.341 US78		Page 32

1980-2010			1980-2025	1	II
FIXED			1960-2025	NG177 2000-2020	
MOBILE				FIXED	Satellite Communications (25)
MOBILE-SATELLITE (Earth-to-spa	ce) 5.351A			MOBILE	Satellite Communications (23)
				MOBILE-SATELLITE	
5.388 5.389A 5.389B 5.389F	0040 0005	10040 0005	4	(Earth-to-space)	
2010-2025 FIXED	2010-2025 FIXED	2010-2025 FIXED			
MOBILE 5.388A 5.388B	MOBILE	MOBILE 5.388A 5.388B		2020-2025	
WOBIEE 3.300/1 3.300B	MOBILE-SATELLITE (Earth-to-space)	WOBIEE 0.000/1 0.000B		FIXED MOBILE	
	, , ,				
5.388	5.388 5.389C 5.389E	5.388		NG177	
2025-2110			2025-2110	2025-2110	
SPACE OPERATION (Earth-to-spa			SPACE OPERATION	FIXED NG118	TV Auxiliary Broadcasting (74F)
FIXED	FE (Earth-to-space) (space-to-space)		(Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE	MOBILE 5.391	Cable TV Relay (78) Local TV Transmission (101J)
MOBILE 5.391			(Earth-to-space) (space-to-space)		Local IV Transmission (1013)
SPACE RESEARCH (Earth-to-spa	ce) (space-to-space)		SPACE RESEARCH		
or riot ricotrator (tarar to opa-	ου (ορασο το ορασο)		(Earth-to-space) (space-to-space)		
			5.391 5.392 US90 US222 US346	5.392 US90 US222 US346	
5.392			US347 US393	US347 US393	
2110-2120			2110-2120	2110-2120	
FIXED				FIXED	Public Mobile (22)
MOBILE 5.388A 5.388B				MOBILE	Wireless Communications (27)
SPACE RESEARCH (deep space)	(Earth-to-space)				Fixed Microwave (101)
5.388			US252	US252	
2120-2170	2120-2160	2120-2170	2120-2200	2120-2180	
FIXED	FIXED	FIXED		FIXED	
MOBILE 5.388A 5.388B	MOBILE 5.388A 5.388B	MOBILE 5.388A 5.388B		MOBILE	
	Mobile-satellite (space-to-Earth)				
	5.388				
	2160-2170				
	FIXED				
	MOBILE				
	MOBILE-SATELLITE (space-to-Earth)				
5.388	5.388 5.389C 5.389E	5.388			
2170-2200	•		1	NG153 NG178	
FIXED				2180-2200	
MOBILE				FIXED	Satellite Communications (25)
MOBILE-SATELLITE (space-to-Ea	rth) 5.351A			MOBILE	
				MOBILE-SATELLITE (space-to-Earth)	
				(opaco to Later)	
5.388 5.389A 5.389F				NG43	Page 36

Table of Frequency Allocations		2200-2655 MHz (UHF)		Page 37	
D 4 T.II.	Internation			ates Table	FCC Rule Part(s)
Region 1 Table Region 2 Table Region 3 Table  2200-2290  SPACE OPERATION (space-to-Earth) (space-to-space)  EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space)  FIXED  MOBILE 5.391  SPACE RESEARCH (space-to-Earth) (space-to-space)		Federal Table  2200-2290  SPACE OPERATION (space-to-Earth) (space-to-space)  EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space)  FIXED (line-of-sight only)  MOBILE (line-of-sight only including aeronautical telemetry, but excluding flight testing of manned aircraft) 5.391  SPACE RESEARCH (space-to-Earth) (space-to-space)	Non-Federal Table 2200-2290		
5.392 2290-2300 FIXED MOBILE except aeronau SPACE RESEARCH (de	tical mobile ep space) (space-to-Earth)		5.392 US303 2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	US303 2290-2300 SPACE RESEARCH (deep space) (space-to-Earth)	
2300-2450 FIXED MOBILE 5.384A	2300-2450 FIXED MOBILE 5.384A		2300-2305 G122	2300-2305 Amateur	Amateur Radio (97)
Amateur RADIOLOCATION Radiolocation Amateur		2305-2310	2305-2310 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur	Wireless Communications (27) Amateur Radio (97)	
			US97 G122 2310-2320 Fixed Mobile US339 Radiolocation G2	US97 2310-2320 FIXED MOBILE US339 BROADCASTING-SATELLITE RADIOLOCATION	Wireless Communications (27) Aviation (87)
			US97 US327 2320-2345 Fixed Radiolocation G2	5.396 US97 US327 2320-2345 BROADCASTING-SATELLITE	Satellite Communications (25)
			US327 2345-2360 Fixed Mobile US339 Radiolocation G2	5.396 US327 2345-2360 FIXED MOBILE US339 BROADCASTING-SATELLITE RADIOLOCATION	Wireless Communications (27) Aviation (87)
			US327 2360-2390 MOBILE US276 RADIOLOCATION G2 G120 Fixed US101	5.396 US327 2360-2390 MOBILE US276 US101	Aviation (87) Personal Radio (95)

3300-3400	3300-3400	3300-3400	3300-3500	3300-3500	<u> </u>
RADIOLOCATION	RADIOLOCATION Amateur Fixed Mobile	RADIOLOCATION Amateur	RADIOLOCATION US108 G2	Amateur Radiolocation US108	Private Land Mobile (90) Amateur Radio (97)
5.149 5.429 5.430	5.149	5.149 5.429			
3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile 5.430A Radiolocation	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.431A	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.432B			
	Radiolocation 5.433	Radiolocation 5.433			
	5.282	5.282 5.432 5.432A	US342	5.282 US342	
5.431	3500-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.433	3500-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433	3500-3650 RADIOLOCATION G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110	3500-3600 Radiolocation	Private Land Mobile (90)
3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile		3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	US245	3600-3650 FIXED-SATELLITE (space-to-Earth) US245 Radiolocation	Satellite Communications (25) Private Land Mobile (90)
		Radiolocation 5.433	3650-3700	3650-3700 FIXED FIXED-SATELLITE (space-to-Earth) NG169 NG185 MOBILE except aeronautical mobile	
	0700 4000	5.435	US109 US349	US109 US349	
	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		3700-4200	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) NG180	Satellite Communications (25) Fixed Microwave (101)
4200-4400 AERONAUTICAL RADIONAVIGATIO			4200-4400 AERONAUTICAL RADIONAVIGATI	ON	Aviation (87)
5.439 5.440			US261		
4400-4500 FIXED MOBILE 5.440A			4400-4500 FIXED MOBILE	4400-4500	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth)	5.441		4500-4800 FIXED MOBILE	4500-4800 FIXED-SATELLITE (space-to-Earth) 5.441 US245	
MOBILE 5.440A 4800-4990 FIXED			US245 4800-4940 FIXED	4800-4940	
MOBILE 5.440A 5.442 Radio astronomy			MOBILE	110000 110040	
. and dononing			US203 US342 4940-4990	US203 US342 4940-4990	
			15.5	FIXED MOBILE except aeronautical mobile	Public Safety Land Mobile (90Y)
5.149 5.339 5.443			5.339 US342 US385 G122	5.339 US342 US385	Page 40

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	International Table		United	States Table	FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	┨ ``′
10-10.45 FIXED MOBILE RADIOLOCATION Amateur	10-10.45 RADIOLOCATION Amateur	10-10.45 FIXED MOBILE RADIOLOCATION Amateur	10-10.5 RADIOLOCATION US108 G32	10-10.45 Amateur Radiolocation US108	Private Land Mobile (90) Amateur Radio (97)
5.479	5.479 5.480	5.479		5.479 US128 NG50	
10.45-10.5 RADIOLOCATION Amateur Amateur-satellite	, 5	, , , , , , , , , , , , , , , , , , , ,		10.45-10.5 Amateur Amateur-satellite Radiolocation US108	
5.481	140 5 40 55		5.479 US128	US128 NG50	
10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION		10.5-10.55 RADIOLOCATION US59		Private Land Mobile (90)
10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation			10.55-10.6	10.55-10.6 FIXED	Fixed Microwave (101)
10.6-10.68 EARTH EXPLORATION-SATELLITE FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation	(passive)		10.6-10.68 EARTH EXPLORATION- SATELLITE (passive) SPACE RESEARCH (passive)	10.6-10.68 EARTH EXPLORATION- SATELLITE (passive) FIXED US265 SPACE RESEARCH (passive)	
5.149 5.482 5.482A			US130 US131 US265	US130 US131	
10.68-10.7 EARTH EXPLORATION-SATELLITE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	(passive)		10.68-10.7 EARTH EXPLORATION-SATELLI RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US131 US246	ITE (passive)	
T0.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 5.484A (Earth-to-space) 5.484	10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	5.441 5.484A	10.7-11.7	10.7-11.7 FIXED FIXED-SATELLITE (space-to- Earth) 5.441 US131 US211 NG104 NG182 NG186	Satellite Communications (25) Fixed Microwave (101)
MOBILE except aeronautical mobile		I	US131 US211		
T1.7-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492	11.7-12.1 FIXED 5.486 FIXED-SATELLITE (space-to-Earth) 5.484A 5.488 Mobile except aeronautical mobile 5.485 12.1-12.2 FIXED-SATELLITE (space-to-Earth) 5.484A 5.488	11.7-12.2 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492	11.7-12.2	11.7-12.2 FIXED-SATELLITE (space-to- Earth) 5.485 5.488 NG143 NG183 NG187	Satellite Communications (25)
	5.485 5.489	5.487 5.487A		NG184	

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Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	1
17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE	17.7-17.8 FIXED FIXED-SATELLITE (space-to-Earth) 5.517 (Earth-to-space) 5.516 BROADCASTING-SATELLITE Mobile	17.7-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE	17.7-17.8	17.7-17.8 FIXED NG144 FIXED-SATELLITE (Earth-to-space) US271	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78)
	5.515		US401 G117	US401	Fixed Microwave (101)
	17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE		17.8-18.3 FIXED-SATELLITE (space-to- Earth) US334 G117	17.8-18.3 FIXED NG144	TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
	5.519				
18.1-18.4 FIXED			US519	US334 US519	
	5.484A 5.516B (Earth-to-space) 5.520		18.3-18.6 FIXED-SATELLITE (space-to- Earth) US334 G117	18.3-18.6 FIXED-SATELLITE (space-to-Earth) NG164	Satellite Communications (25)
5.519 5.521 18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth)	5.484A 5.516B				
MOBILE	1	1		US334 NG144	
18.6-18.8  EARTH EXPLORATION-SATEL- LITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B  MOBILE except aeronautical mobile Space research (passive)	5.516B 5.522B	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive)	18.6-18.8 EARTH EXPLORATION- SATELLITE (passive) FIXED-SATELLITE (space-to- Earth) US255 US334 G117 SPACE RESEARCH (passive)	18.6-18.8  EARTH EXPLORATION-SATELLITE (passive)  FIXED-SATELLITE (space-to-Earth) US255 NG164  SPACE RESEARCH (passive)	
5.522A 5.522C	5.522A	5.522A	US254	US254 US334 NG144	
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	5.516B 5.523A		18.8-20.2 FIXED-SATELLITE (space-to- Earth) US334 G117	18.8-19.3 FIXED-SATELLITE (space-to-Earth) NG165 US334 NG144	
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	(Earth-to-space) 5.523B 5.523C 5.523D	5.523E		19.3-19.7 FIXED NG144 FIXED-SATELLITE (space-to-Earth) NG166 US334	Satellite Communications (25) TV Broadc't Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B Mobile-satellite (space-to-Earth)	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE-SATELLITE (space-to-Earth)	19.7-20.1 FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B Mobile-satellite (space-to-Earth)		19.7-20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)	Satellite Communications (25)
5.524	5.524 5.525 5.526 5.527 5.528 5.529	5.524			

20.1-20.2 FIXED-SATELLITE (space-to-Earth MOBILE-SATELLITE (space-to-Earth 5.524 5.525 5.526 5.527 5.528 20.2-21.2	rth)		20.2-21.2	5.525 5.526 5.527 5.528 5.529 US334 20.2-21.2	
FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth)			FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth)	Standard frequency and time signal-satellite (space-to-Earth)	
5.524 21.2-21.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)			G117 21.2-21.4 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)		Fixed Microwave (101)
21.4-22 FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530	21.4-22 FIXED MOBILE	21.4-22 FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530 5.531	US263 21.4-22 FIXED MOBILE		
22-22.21 FIXED MOBILE except aeronautical mobile	22-22.21		22-22.21 FIXED MOBILE except aeronautical mobile		
FIXED	22.21-22.5  EARTH EXPLORATION-SATELLITE (passive)  FIXED  MOBILE except aeronautical mobile  RADIO ASTRONOMY		US342  22.21-22.5  EARTH EXPLORATION-SATELL FIXED  MOBILE except aeronautical mot RADIO ASTRONOMY  SPACE RESEARCH (passive)		
5.149 5.532 22.5-22.55 FIXED MOBILE		US263 US342 22.5-22.55 FIXED MOBILE			
22.55-23.55 FIXED INTER-SATELLITE 5.338A MOBILE		US211  22.55-23.55 FIXED INTER-SATELLITE US278 MOBILE		Satellite Communications (25) Fixed Microwave (101)	
5.149 23.55-23.6 FIXED MOBILE			US342 23.55-23.6 FIXED MOBILE		Fixed Microwave (101) Page 52

25.5-27 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-to-Earth Standard frequency and time signal-s	) 5.536C		25.5-27 EARTH EXPLORATION- SATELLITE (space-to-Earth) FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-to-Earth) Standard frequency and time signal-satellite (Earth-to-space) 5.536A US258	25.5-27 Inter-satellite 5.536 Standard frequency and time signal-satellite (Earth-to-space)	
27-27.5	27-27.5		27-27.5	27-27.5	
FIXED	FIXED		FIXED	Inter-satellite 5.536	
INTER-SATELLITE 5.536	FIXED-SATELLITE (Earth-to-space)		INTER-SATELLITE 5.536		
MOBILE	INTER-SATELLITE 5.536 5.537		MOBILE		
27.5-28.5	MOBILE		27.5-30	27.5-29.5	
27.5-26.5 FIXED 5.537A			27.5-30	27.5-29.5   FIXED	Satellite Communications (25)
FIXED-SATELLITE (Earth-to-space)	5 484A 5 516B 5 539			FIXED-SATELLITE (Earth-to-space)	Fixed Microwave (101)
MOBILE	0.10474 0.01010 0.000			MOBILE	1 ixed Milerewave (101)
5.538 5.540					
28.5-29.1					
FIXED CATELLITE (Forth to arross)	E 4044 E E46D E E224 E E20				
FIXED-SATELLITE (Earth-to-space) MOBILE	5.464A 5.516B 5.525A 5.539				
Earth exploration-satellite (Earth-to-s	nace) 5 541				
Editi oxploration datolito (Editi to o	pass, 5.511				
5.540					
29.1-29.5					
FIXED SATELLITE (Forth to appeal)	5.516B 5.523C 5.523E 5.535A 5.539	) E E 4 1 A			
MOBILE	5.510B 5.523C 5.523E 5.535A 5.538	9 5.54 IA			
Earth exploration-satellite (Earth-to-s	pace) 5.541				
	, , , , , , , , , , , , , , , , , , , ,				
5.540					
29.5-29.9	29.5-29.9	29.5-29.9		29.5-30	
FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539		FIXED-SATELLITE (Earth-to-space)	Satellite Communications (25)
Earth exploration-satellite	MOBILE-SATELLITE	Earth exploration-satellite		MOBILE-SATELLITE (Earth-to-space)	
(Earth-to-space) 5.541	(Earth-to-space)	(Earth-to-space) 5.541		(Larti to space)	
Mobile-satellite (Éarth-to-space)	Earth exploration-satellite	Mobile-satellite (Éarth-to-space)			
	(Earth-to-space) 5.541				
	5.525 5.526 5.527 5.529 5.540				
5.540 5.542	5.542	5.540 5.542			
29.9-30	E 404A E E1CD E E2O				
FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)					
Earth exploration-satellite (Earth-to-space					
	,				D 54
5.525 5.526 5.527 5.538 5.540 5.5	042		<u>                                     </u>	5.525 5.526 5.527 5.529 5.543	Page 54

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# **UNITED STATES (US) FOOTNOTES**

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US83 In the 1432-1435 MHz band, Federal stations in the fixed and mobile services may operate indefinitely on a primary basis at the 22 sites listed in the table below. The first 21 sites are in the United States and the last site is in Guam (GU). All other Federal stations in the fixed and mobile services shall operate in the band 1432-1435 MHz on a primary basis until re-accommodated in accordance with the National Defense Authorization Act of 1999.

State	Site	North	West	Radius
AK	Fort Greely	63° 47'	145° 52'	80
AL	Redstone Arsenal	34° 35'	086° 35'	80
AZ	Fort Huachuca	31° 33'	110° 18'	80
AZ	Yuma Proving Ground	32° 29'	114° 20'	160
CA	China Lake/Edwards AFB	35° 29'	117° 16'	100
CA	Lemoore	36° 20'	119° 57'	120
FL	Eglin AFB/Ft Rucker, AL	30° 28'	086° 31'	140
FL	NAS Cecil Field	30° 13'	081° 52'	160
MD	Patuxent River	38° 17'	076° 24'	70
ME	Naval Space Operations	44° 24'	068° 01'	80
	Center			
MI	Alpene Range	44° 23'	083° 20'	80
MS	Camp Shelby	31° 20'	089° 18'	80
NC	MCAS Cherry Point	34° 54'	076° 53'	100
NM	White Sands Missile	32° 11'	106° 20'	160
	Range/Holloman AFB			
NV	NAS Fallon	39° 30'	118° 46'	100
NV	Nevada Test and Training	37° 29'	114° 14'	130
	Range (NTTR)			
SC	Beaufort MCAS	32° 26'	080° 40'	160
SC	Savannah River	33° 15'	081° 39'	3
UT	Utah Test and Training	40° 57'	113° 05'	160
	Range/Dugway Proving			
-	Ground, Hill AFB			
VA	NAS Oceana	36° 49'	076° 01'	100
WA	NAS Whidbey Island	48° 21'	122° 39'	70
GU	NCTAMS	13° 35'	144° 51'	80

NOTE: The coordinates (North latitude and West longitude) are listed under the headings North and West. The Guam entry under the West heading is actually 144° 51' East longitude. The operating radii in kilometers are listed under the heading Radius.

\* \* \* \* \*

US97 The following provisions shall apply in the band 2305-2320 MHz:

- (a) In the sub-band 2305-2310 MHz, space-to-Earth operations are prohibited.
- (b) Within 145 km of Goldstone, CA (35° 25' 33" N, 116° 53' 23" W), Wireless Communications Service (WCS) licensees operating base stations in the band 2305-2320 MHz shall, prior to operation of those base stations, achieve a mutually satisfactory coordination agreement with the National Aeronautics and Space Administration (NASA).

NOTE: NASA operates a deep space facility in Goldstone in the band 2290-2300 MHz.

\* \* \* \* \*

US109 The band 3650-3700 MHz is also allocated to the Federal radiolocation service on a primary basis at the following sites: St. Inigoes, MD (38° 10' N, 76° 23' W) and Pensacola, FL (30° 21' 28" N, 87° 16' 26" W). The FCC shall coordinate all non-Federal operations within 80 km of these sites with NTIA on a case-by-case basis.

\* \* \* \* \*

US117 In the band 406.1-410 MHz, the following provisions shall apply:

- (a) Stations in the fixed and mobile services are limited to a transmitter output power of 125 watts, and new authorizations for stations, other than mobile stations, are subject to prior coordination by the applicant in the following areas:
- (1) Within Puerto Rico and the U.S. Virgin Islands, contact Spectrum Manager, Arecibo Observatory, HC3 Box 53995, Arecibo, PR 00612. Phone: 787-878-2612, Fax: 787-878-1861, E-mail: prcz@naic.edu.
- (2) Within 350 km of the Very Large Array (34° 04' 44" N, 107° 37' 06" W), contact Spectrum Manager, National Radio Astronomy Observatory, P.O. Box O, 1003 Lopezville Road, Socorro, NM 87801. Phone: 505-835-7000, Fax: 505-835-7027, E-mail: <a href="mailto:nrao-rfi@nrao.edu">nrao-rfi@nrao.edu</a>.
- (3) Within 10 km of the Table Mountain Observatory (40° 08' 02" N, 105° 14' 40" W) and for operations only within the sub-band 407-409 MHz, contact Radio Frequency Manager, Department of

Commerce, 325 Broadway, Boulder, CO 80305. Phone: 303-497-4619, Fax: 303-497-6982, E-mail: frequencymanager@its.bldrdoc.gov.

(b) Non-Federal use is limited to the radio astronomy service and as provided by footnote US13.\* \* \* \* \*

US128 In the band 10-10.5 GHz, pulsed emissions are prohibited, except for weather radars on board meteorological satellites in the sub-band 10-10.025 GHz. The amateur service, the amateur-satellite service, and the non-Federal radiolocation service, which shall not cause harmful interference to the Federal radiolocation service, are the only non-Federal services permitted in this band. The non-Federal radiolocation service is limited to survey operations as specified in footnote US108.

US130 The band 10.6-10.68 GHz is also allocated on a primary basis to the radio astronomy service. However, the radio astronomy service shall not receive protection from stations in the fixed service which are licensed to operate in the one hundred most populous urbanized areas as defined by the 1990 U.S. Census. For the list of observatories operating in this band, see footnote US131.

US131 In the band 10.7-11.7 GHz, non-geostationary satellite orbit licensees in the fixed-satellite service (space-to-Earth), prior to commencing operations, shall coordinate with the following radio astronomy observatories to achieve a mutually acceptable agreement regarding the protection of the radio telescope facilities operating in the band 10.6-10.7 GHz:

Observatory	North latitude	West longitude	Elevation (in meters)
Arecibo Observatory, PR	18° 20' 37"	66° 45' 11"	497
Green Bank Telescope (GBT), WV	38° 25' 59"	79° 50' 23"	807
Very Large Array (VLA), Socorro, NM	34° 04' 44"	107° 37' 06"	2115
Very Long Baseline Array (VLBA) Stations:			
Brewster, WA	48° 07' 52"	119° 41' 00"	250
Fort Davis, TX	30° 38' 06"	103° 56' 41"	1606
Hancock, NH	42° 56' 01"	71° 59' 12"	296
Kitt Peak, AZ	31° 57' 23"	111° 36' 45"	1902
Los Alamos, NM	35° 46' 30"	106° 14' 44"	1962
Mauna Kea, HI	19° 48' 05"	155° 27' 20"	3763
North Liberty, IA	41° 46' 17"	91° 34' 27"	222
Owens Valley, CA	37° 13' 54"	118° 16' 37"	1196
Pie Town, NM	34° 18' 04"	108° 07' 09"	2365
St. Croix, VI	17° 45' 24"	64° 35' 01"	16

\* \* \* \* \*

US288 In the territorial waters of the United States, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174-2.

\* \* \* \* \*

# NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

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NG32 Frequencies in the bands 454.6625-454.9875 MHz and 459.6625-459.9875 MHz may be assigned to domestic public land and mobile stations to provide a two-way air-ground public radiotelephone service.

\* \* \* \* \*

NG43 Except as permitted below, the use of the band 2180-2200 MHz is limited to the mobile-satellite service (MSS) and ancillary terrestrial components offered in conjunction with an MSS network, subject to the Commission's rules for ancillary terrestrial components and subject to all applicable conditions and provisions of an MSS authorization. In the band 2180-2200 MHz, where the receipt date of the initial application for facilities in the fixed and mobile services was prior to January 16, 1992, said facilities shall operate on a primary basis and all later-applied-for facilities shall operate on a secondary basis to the MSS; and not later than December 9, 2013, all such facilities shall operate on a secondary basis.

\* \* \* \* \*

NG50 In the band 10-10.5 GHz, non-Federal stations in the radiolocation service shall not cause harmful interference to the amateur service; and in the sub-band 10.45-10.5 GHz, these stations shall not cause harmful interference to the amateur-satellite service.

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### FEDERAL GOVERNMENT (G) FOOTNOTES

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G27 In the bands 225-328.6 MHz, 335.4-399.9 MHz, and 1350-1390 MHz, the fixed and mobile services are limited to the military systems.

\* \* \* \* \*

G117 In the bands 7.25-7.75 GHz, 7.9-8.4 GHz, 17.375-17.475 GHz, 17.6-21.2 GHz, 30-31 GHz, 33-36 GHz, 39.5-41 GHz, 43.5-45.5 GHz, and 50.4-51.4 GHz, the Federal fixed-satellite and mobile-satellite services are limited to military systems.

\* \* \* \* \*

#### PART 15 – RADIO FREQUENCY DEVICES

3. The authority citation for Part 15 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, 304, 307, 336, 544a, and 549.

4. Section 15.242 is amended by revising paragraph (e) to read as follows:

# § 15.242 Operation in the bands 174-216 MHz and 470-668 MHz.

\* \* \* \* \*

(e) The user and the installer of a biomedical telemetry device operating within the frequency range 608-614 MHz and that will be located within 32 km of the very long baseline array (VLBA) stations or within 80 km of any of the other radio astronomy observatories noted in footnote US385 of Section 2.106 of this chapter must coordinate with, and obtain the written concurrence of, the director of the affected radio astronomy observatory before the equipment can be installed or operated. The National Science Foundation point of contact for coordination is: Spectrum Manager, Division of Astronomical Sciences, NSF Room 1045, 4201 Wilson Blvd., Arlington, VA 22230; tel: (703) 306-1823.

\* \* \* \* \*

### PART 90 - PRIVATE LAND MOBILE RADIO SERVICES

5. The authority citation for Part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 154(i), 161, 303(g), 303(r), and 332(c)(7), and Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, 126 Stat. 156.

6. Section 90.103 is amended by revising the last sentence in paragraph (c)(21) to read as follows:

#### § 90.103 Radiolocation Service.

\* \* \* \* \*

(c) \* \* \*

(21) \* \* \* Authorizations will be granted on a case-by-case basis; however, operations proposed to be located within the zones set forth in footnote US269, §2.106 of this chapter should not expect to be accommodated.

\* \* \* \* \*

7. Section 90.1331 is amended by revising paragraph (b)(1) to read as follows:

## § 90.1331 Restrictions on the operation of base and fixed stations.

\* \* \* \* \*

(b)(1) Except as specified in paragraph (b)(2) of this section, base and fixed stations may not be located within 80 km of the following Federal Government radiolocation facilities:

St. Inigoes, MD—38° 10' N., 76°, 23' W.

Pensacola, FL-30° 21' 28" N., 87°, 16' 26" W.

NOTE TO PARAGRAPH (b)(1): Licensees installing equipment in the 3650-3700 MHz band should determine if there are any nearby Federal Government radar systems that could affect their operations. Information regarding the location and operational characteristics of the radar systems operating adjacent to this band are provided in NTIA TR-99-361.

\* \* \* \* \*

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